



#### IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants : Stephen J. Smith et al.

Application No. : 10/666,948 Confirmation No. 7049

Filed : September 19, 2003

For : RECONFIGURABLE PROGRAMMABLE LOGIC

DEVICE COMPUTER SYSTEM

Group Art Unit : 2183

New York, New York 10020

January 30, 2004

Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450

## INFORMATION DISCLOSURE STATEMENT

Sir:

In accordance with 37 C.F.R. §§ 1.56 and 1.97, applicants wish to call the attention of the Examiner to the following references:

### U.S. Patent Documents

| binson 11/26/9:    | 1   |
|--------------------|---|
| • •                |   |
| ylor 07/09/9       | 6   |
| durawe 08/20/9     | 6   |
| sselman 11/04/9    | 7   |
| oke et al. 10/12/9 | 9   |
| outhgate 10/19/99  | 9   |
| ith 07/04/0        | 0   |
| ng 08/28/03        | 1   |
| ֡                  | ylor 07/09/99 durawe 08/20/99 sselman 11/04/99 ooke et al. 10/12/99 outhgate 10/19/99 oith 07/04/09 |

#### Foreign Patent Documents

| *1 | 444 084     | Great | Britain 07/28/76 |
|----|-------------|-------|------------------|
| ΕP | 0 419 105 A | 2 EPO | 03/27/91         |
| ΕP | 0 445 913 A | 2 EPO | 09/11/91         |
| WO | 94/10627    | PCT   | 05/11/94         |
| EP | 0 759 662 A | 2 EPO | 02/26/97         |
| WO | 97/13209    | PCT   | 04/10/97         |
| ΕP | 0 801 351 A | 2 EPO | 10/15/97         |
| ΕP | 0 829 812 A | 2 EPO | 03/18/98         |
| WO | 00/38087    | PCT   | 06/29/00         |

#### Other Documents

M. Wazlowski et al., "PRISM-II Compiler and Architecture," IEEE, 1993, pp. 9-16.

David Wo et al., "Compiling to the gate Level for a Reconfigurable Co-Processor," IEEE, 1994, pp. 147-154.

Christian Iseli et al., "A C++ compiler for FPGA custom execution units synthesis," IEEE, 1995, pp. 173-179.

Ian Page, "Constructing Hardware-Software Systems from
a Single Description," Journal of VLSI Signal
Processing, Vol. 12, No. 1, January 1996, pp. 87-107.

M.D. Edwards, J. Forrest - "Software acceleration using programmable hardware devices," January 1996, pp. 55-63.

Tsuyoshi Isshiki et al., "Bit-Serial Pipeline Synthesis and Layout for Large-Scale Configurable Systems," IEEE, 1997, pp. 441-446.

Luc Séméria et al., "SpC: Synthesis of Pointers in C Application of Pointer Analysis to the Behavioral Synthesis from C," 1998, pp. 340-346.

ELECTRONIK, DE, FRANZIS VERLAG GMBH - "MIT PROGRAMMIERBARER LOGIK VERHEIRATED," March 31, 1998, Vol. 47, No. 7, p. 38.

Michael J. Wirthlin and Brad L. Hutchings - "Improving Functional Density Using Run-Time Circuit Reconfiguration," June 1998, pp. 247-256.

João M.P. Cardoso et al., "Macro-Based Hardware Compilation of Java Bytecodes into a Dynamic Reconfigurable Computing System," IEEE, 1999, pp. 2-11. Bernardo Kastrup et al., "ConCISe: A Compiler-Driven CPLD-Based Instruction Set Accelerator," IEEE, 1999, pp. 92-101.

"List of FPGA-based Computing Machines," Steve Guccione, <a href="http://www.io.com/~guccione//HW\_list.html">http://www.io.com/~guccione//HW\_list.html</a>, Last modified March 31, 1999.

Timothy J. Callahan et al., "The Garp Architecture and C Compiler," IEEE, April 2000, pp. 62-69.

The aforementioned documents are listed on the accompanying Form PTO-1449 (submitted in duplicate). The document marked with an asterisk (\*) is enclosed. All other documents were previously cited by or submitted to the Patent Office in U.S. Patent Application No.

09/443,971, filed November 19, 1999, now U.S. Patent No.
6,658,564 B1, an earlier application from which the above-identified application relies upon for an earlier filing date under 35 U.S.C. § 120. Accordingly, pursuant to
37 C.F.R. § 1.98(d), no copies of these references accompany this Information Disclosure Statement.

It is respectfully requested that the above documents be (1) fully considered by the Patent and Trademark Office during examination of this application; and (2) printed on any patent which may issue on this application. Applicants request that a copy of Form

PTO-1449, as considered and initialed by the Examiner, be returned with the next communication.

Respectfully submitted,

Evelyn C. Mak

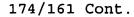
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# TRANSMITTAL LETTER FOR INFORMATION DISCLOSURE STATEMENT

Sir:

Transmitted herewith is an Information Disclosure

Statement in the above-identified application. This

Statement is submitted:

- [ ] within three months of the application filing date;
- [X] more than three months from the application filing date but before the mailing date of the first Office Action on the merits.

In accordance with 37 C.F.R. § 1.97, submission of this Statement requires no fee. However, if for any

reason a fee is due, the Director is hereby authorized to charge payment of any fees required in connection with this Information Disclosure Statement to Deposit Account No. 06-1075. A duplicate copy of this letter is transmitted herewith.

Respectfully submitted,

Evelyn C. mak

Evelyn C. Mak Registration No. 50,492 Agent for Applicants

FISH & NEAVE Customer No. 36,981 1251 Avenue of the Americas New York, New York 10020-1105 (212) 596-9000

I hereby certify that this Correspondence is being deposited with the U.S. Postal Service as First Class Mail in an envelope Addressed to: Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450 on

Lilian Garcia \

Signature of Person Signing

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FORM 170-1449

# S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

# INFORMATION DISCLOSURE STATEMENT BY APPLICANTS

| <b>ATTY. DOCKET NO.</b> 174/161 Cont. | <b>APPLICATION NO.</b> 10/666,948 |
|---------------------------------------|-----------------------------------|
| APPLICANTS Stephen J. Smith et al.    | CONFIRMATION NO. 7049             |
| FILING DATE<br>September 19, 2003     | GROUP ART UNIT<br>2183            |

#### **U.S. PATENT DOCUMENTS**

| EXAMINER INITIAL | DOCUMENT<br>NUMBER | DATE     | NAME         | CLASS | SUBCLASS | FILING DATE IF APPROPRIATE |
|------------------|--------------------|----------|--------------|-------|----------|----------------------------|
|                  | 5,068,823          | 11/26/91 | Robinson     | 395   | 500      |                            |
|                  | 5,142,625          | 08/25/92 | Nakai        | 395   | 275      |                            |
| -                | 5,548,228          | 08/20/96 | Madurawe     | 326   | 41       |                            |
| .,               | 5,535,342          | 07/09/96 | Taylor       | 395   | 307      |                            |
|                  | 5,684,980          | 11/04/97 | Casselman    | 395   | 500      |                            |
|                  | 5,966,534          | 10/12/99 | Cooke et al. | 395   | 705      |                            |
|                  | 5,968,161          | 10/19/99 | Southgate    | 712   | 37       |                            |
|                  | 6,085,317          | 07/04/00 | Smith        | 713   | 1        |                            |
| -                | 6,282,627          | 08/28/01 | Wong         | 712   | 15       |                            |

#### **FOREIGN PATENT DOCUMENTS**

| EXAMINER | DOCUMENT        | DATE     | COUNTRY       | COUNTRY | CLASS    | SUBCLASS | TRANSL | ATION |
|----------|-----------------|----------|---------------|---------|----------|----------|--------|-------|
| INITIAL  | NUMBER          |          |               | J OLAGO | OOBOLAGO | YES      | NO     |       |
|          | 1 444 084       | 07/28/76 | Great Britain | H03K    | 19/00    |          |        |       |
|          | EP 0 419 105 A2 | 03/27/91 | EPO           | G06F    | 15/78    |          | )      |       |
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|          | EP 0 829 812 A2 | 03/18/98 | EPO           | G06F    | 17/50    |          |        |       |
|          | WO 00/38087     | 06/29/00 | PCT           | G06F    | 17/50    |          |        |       |

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

| EXAMINER INITIAL |  |
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|                  | M. Wazlowski et al., "PRISM-II Compiler and Architecture," IEEE, 1993, pp. 9-16.                           |
|                  | David Wo et al., "Compiling to the gate Level for a Reconfigurable Co-Processor," IEEE, 1994, pp. 147-154. |
|                  |  |

#### **EXAMINER**

#### **DATE CONSIDERED**

**EXAMINER:** Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not conformance and not considered. Include copy of this form with next communication to applicant.



## **U.S. DEPARTMENT OF COMMERCE** PATENT AND TRADEMARK OFFICE

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OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

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|                  | Christian Iseli et al., "A C++ compiler for FPGA custom execution units synthesis," IEEE, 1995, pp. 173-179.  |  |  |  |  |  |
|                  | lan Page, "Constructing Hardware-Software Systems from a Single Description," Journal of VLSI Signal Processing, Vol. 12, No. 1, January 1996, pp. 87-107.                                |  |  |  |  |  |
|                  | M.D. Edwards, J. Forrest - "Software acceleration using programmable hardware devices," January 1996, p. 55-63.   |  |  |  |  |  |
|                  | Tsuyoshi Isshiki et al., "Bit-Serial Pipeline Synthesis and Layout for Large-Scale Configurable Systems," IEEE, 1997, pp. 441-446.  |  |  |  |  |  |
|                  | Luc Séméria et al., "SpC: Synthesis of Pointers in C Application of Pointer Analysis to the Behavioral Synthesis from C," 1998, pp. 340-346.  |  |  |  |  |  |
|                  | ELECTRONIK, DE, FRANZIS VERLAG GMBH - "MIT PROGRAMMIERBARER LOGIK VERHEIRATED," March 31, 1998, Vol. 47, No. 7, p. 38.  |  |  |  |  |  |
|                  | Michael J. Wirthlin and Brad L. Hutchings - "Improving Functional Density Using Run-Time Circuit Reconfiguration," June 1998, p. 247-256.   |  |  |  |  |  |
|                  | João M.P. Cardoso et al., "Macro-Based Hardware Compilation of Java™ Bytecodes into a Dynamic Reconfigurable Computing System," IEEE, 1999, pp. 2-11.                                     |  |  |  |  |  |
|                  | Bernardo Kastrup et al., "ConCISe: A Compiler-Driven CPLD-Based Instruction Set Accelerator," IEEE 1999, pp. 92-101.  |  |  |  |  |  |
|                  | "List of FPGA-based Computing Machines," Steve Guccione, <a href="http://www.io.com/~guccione//HW_list.html">http://www.io.com/~guccione//HW_list.html</a> , Last updated March 31, 1999. |  |  |  |  |  |
|                  | Timothy J. Callahan et al., "The Garp Architecture and C Compiler," IEEE, April 2000, pp. 62-69.  |  |  |  |  |  |

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